

WATER MANAGEMENT: SOME CURRENT ISSUES

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Water management has assumed increasing importance with the expansion of irrigated agriculture in recent years. The purpose of this brief paper is to highlight some of the vital issues relating to the management of water. viz: a multi-disciplinary approach to the study of the problems pertaining to water management, a better system of management for fair distribution of water, effective on-farm management to increase the productivity of water, need for effective farmer organizations, micro-regional variations in water use depending on socio-cultural factors, farmer training and the training of the officials, the gap between the bureaucracy and the water-users and the necessity for a proper management system for village irrigation works.

Water management is often considered to be the domain of the irrigation engineer owing to his responsibility in designing, construction and maintenance of irrigation structures. Investigation into many other areas pertaining to the use of water, particularly the relationship between people and irrigation water, are largely neglected. Nevertheless, mono-disciplinary studies have hitherto failed to furnish a com-

prehensive analysis of the complex problems associated with water management.

In the administration of irrigation it is assumed that the engineering aspects of the irrigation systems are intact and problems of water management are "people's problems". But the experience with the major irrigation schemes in the Dry Zone of Sri Lanka suggests a need for a better systems management. The successful on-farm management of irrigation water depends on the degree of perfection with which the system operates. Field evidence from the Left Bank channel of the Rajangana Scheme, H3 area of the Kala Oya Basin and elsewhere, support the conclusion that in most cases inequitable distribution of water is inherent in the system and the tail-enders of the irrigation channels fail to receive at least the bare minimum of water for cultivation purposes.

Defects in the system are largely connected with poor maintenance. Breach of canal bunds and silting of the floors are the major contributory factors for the retarded conveyance of water in irrigation channels. This may lead to a reduction of the volume

of water received by the farmers.

Added to these consequences of poor maintenance of irrigation structures, are the mal-practices such as the cultivation of canal reservations and the theft of water by top-enders. These practices hinder the smooth working of an irrigation system.

On farm management of water is as equally significant as the systems management, mainly because the productivity of water is an important consideration in irrigated agriculture. Unlike in the community controlled smaller irrigation systems, water issues to the fields in the major schemes are from the individual outlets. This method reduces the interdependence of farmers to a minimum. Hence the significance of more realistic and effective farmer organizations in water management cannot be overlooked. Such organizations will not only enhance the social cohesion but also tend to reduce the existing mal-practices associated with the use of irrigation water. Several experiments on farmer organizations have been tried out in recent years and relevant issues have been discussed in a recent paper. (Karunanayake, M. M. "Farmer Organizations and irrigation leadership in Sri Lanka"). It may be necessary to have several types of farmer organizations depending on regional

variations relating to irrigation practices.

It is common place to blame the farmer for all deficiencies in water management, particularly for wasting water. But it is unfortunate that the idea of the wastage of irrigation water is based on the crop-water requirements calculated under experimental conditions. Many factors affecting micro-regional variations in water use, more specifically the socio-cultural factors, are often neglected. For instance, the colonists from the Wet Zone usually carry their cultural practices which encourage a permissive use of water, to the new settlements in the Dry Zone. Their adaptation to the scarcity of water in the new environment is extremely slow. Hence it is clear that different strategies should be evolved in water management and farmer training depending on the type of settler. Agricultural extension work which educates the farmer to adopt new crop patterns with a reduced consumption of water, particularly during the yala season, may be essential.

Farmer training alone would not be sufficient to introduce an efficient system of water management. It is equally important to train the officials, specially those who work at the grass-roots level. There is conclusive evidence to suggest that one of the important factors which impedes efficiency in water management is the existing gap between the water-user and the irrigation

bureaucracy. With a view to bridge this gap, a more realistic approach on the part of the irrigation bureaucracy should be evolved in order to develop a sympathetic understanding of the water-users' problems.

The imposition of a water tax has been advocated for sometime with a view to check the permissive use of irrigation water by the cultivators and to recover at least partly the financial investment on irrigation. A water tax is presently levied in the H areas of the Mahavelli scheme. There are a number of deficiencies associated with this tax. For instance, all farmers irrespective of the amount of water consumed have to pay the water tax on the basis of the unit of cultivation. This seems to be unfair as the physical volume of water received by the top-enders of a canal is greater than the amount of water received by the tail-enders. It would be more satisfactory to levy a tax on the basis of the volume of water used by each farmer or a small group of farmers. In the Sri Lankan context a realistic approach would be to levy a water tax on a group basis; charging the individual would be unrealistic in view of the investment on the infrastructure necessary for this purpose. The farmer organizations can play a useful role in the collection of a group levy on irrigation water. It is worth noting that the Mahavelli Turnout Groups also provide a very useful basis to col-

lect a group tax. However, in other major irrigation schemes this would necessitate a re-designing of irrigation layouts.

An observation on the top ranks of the irrigation bureaucracy as well is apt at this stage. As Moore observes ("The Management of Irrigation systems in Sri Lanka", Sri Lanka Journal of Social Sciences, Dec. 1979) the irrigation engineers in this country belong to the civil engineering profession. Although they receive a comprehensive training in design and construction of physical infrastructure, they are not exposed to such a training in the operation and maintenance of irrigation systems. It is therefore important that a separate cadre of agriculture engineers be trained to accept responsibilities in water management.

The emphasis on water management is confined to the large irrigation schemes. One could justify this stand on the basis that the expenditure on irrigation has reached a new high in Sri Lanka and the farmers' concept of irrigation water as a gift has remained unchanged. The policy of the government towards the minor irrigation systems is limited to the rehabilitation of the village tanks in the Dry Zone. It is clear that this strategy alone will not lead to an increase in the productivity of water. Hence, it is essential to evolve a proper water management system for village irrigation works as well.